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Amendments to the Claims

Please amend Claims 1 and 23 through 33 such that the pending claims will read as follows:

1. (Currently Amended) A scheduler for a network processor, the scheduler including a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS) / SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow;

and

SF is a scaling factor;

wherein the scaling factor SF is adjusted depending on a result of comparing the distance D to the range R.

2. (Original) The scheduler of claim 1, wherein SF is increased if $D > R$.

3. (Original) The scheduler of claim 2, wherein SF is increased if D exceeds R in regard to a predetermined number of calculations of D.

4. (Original) The scheduler of claim 1, wherein SF is decreased if $D < R/2$.

5. (Original) The scheduler of claim 4, wherein SF is decreased if D is less than one-half R in regard to a predetermined number of calculations of D.

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6. (Original) The scheduler of claim 1, wherein $SF = 2n$, n being a positive integer.

7. (Original) A scheduler of claim 6, wherein n is incremented to adjust SF .

8. (Original) The scheduler of claim 6, wherein n is decremented to adjust SF .

9. (Original) A method of managing a scheduling queue in a scheduler for a network processor, the scheduling queue having a range R , flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow;

and

SF is a scaling factor;

the method comprising:

calculating the distance D with respect to a particular flow to be enqueued;

comparing the distance D to the range R ; and

adjusting the scaling factor SF based on a result of the comparing step.

10. (Original) The method of claim 9, wherein the scaling factor SF is increased if the comparing step determines that $D > R$.

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11. (Original) The method of claim 9, wherein the scaling factor SF is decreased if the comparing step determines that $D < R/2$.

12. (Original) The method of claim 9, wherein $SF = 2n$, n being a positive integer, and the adjusting step includes incrementing or decrementing n.

13. (Original) A method of managing a scheduling queue in a scheduler for a network processor, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow;

and

SF is a scaling factor;

the method comprising:

calculating the distance D with respect to a particular flow to be enqueued;

comparing the distance D to the range R;

incrementing a counter if the comparing step determines that $D > R$; and

increasing SF if the incremented counter exceeds a threshold.

14. (Original) The method of claim 13, wherein $SF = 2n$, n being a positive integer, and the increasing step includes incrementing n.

15. (Original) A method of managing a scheduling queue in a scheduler for a network processor, the scheduling queue

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having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow;

and

SF is a scaling factor;

the method comprising:

calculating the distance D with respect to a particular flow to be enqueued;

comparing the distance D to the range R;

incrementing a counter if the comparing step determines that $D < R/2$; and

decreasing SF if the incremented counter exceeds a threshold.

16.(Original) The method of claim 15, further comprising: clearing the counter if the comparing step determines that $D > R/2$.

17.(Original) The method of claim 15, wherein $SF = 2^n$, n being a positive integer, and the decreasing step includes decrementing n.

18.(Original) A method of managing a scheduling queue in a scheduler for a network processor, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

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FS is a frame size attributable to the respective flow;
and
SF is a scaling factor;
the method comprising:
calculating the distance D with respect to a particular
flow to be enqueued;
comparing the distance D to the range R;
incrementing a first counter if the comparing step
determines that $D > R$;
increasing SF if the incremented first counter exceeds a
first threshold;
incrementing a second counter if the comparing step
determines that $D < R/2$; and
decreasing SF if the incremented second counter exceeds a
second threshold.

19.(Original) The method of claim 18, further comprising:
clearing the second counter if the comparing step
determines that $D > R/2$.

20.(Original) The method of claim 18, wherein $SF = 2n$, n
being a positive integer, the increasing step includes
incrementing n, and the decreasing step includes decrementing
n.

21.(Original) A method of managing a scheduling queue in
a scheduler for a network processor, the scheduling queue
having a range R, flows being attached to the scheduling queue
at a distance D from a current pointer for the scheduling
queue, the distance D being calculated for each flow according
to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

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FS is a frame size attributable to the respective flow;
and
SF is a scaling factor;
the method comprising:
calculating the distance D with respect to a particular
flow to be enqueued;
comparing the distance D to the range R; and
increasing SF if the distance D exceeds the range R.

22. (Original) A method of managing a scheduling queue in a scheduler for a network processor, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS) / SF)$, where:

WF is a weighting factor applicable to a respective flow;
FS is a frame size attributable to the respective flow;
and
SF is a scaling factor;
the method comprising:
calculating the distance D with respect to a particular
flow to be enqueued;
comparing the distance D to the range R;
increasing SF if the distance D exceeds the range R;
incrementing a counter if the comparing step determines that $D < R/2$; and
decreasing SF if the incremented counter exceeds a threshold.

23. (Currently Amended) A scheduler for a network processor, the scheduler including:
a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being

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attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

wherein the scheduler is adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R;

increment a counter if the comparison of the distance D to the range R determines that $D > R$; and

increase SF if the incremented counter exceeds a threshold.

24. (Currently Amended) A scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

wherein the scheduler is adapted to:

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calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R ;

increment a counter if the comparison of the distance D to the range R determines that $D < R/2$; and

decrease SF if the incremented counter exceeds a threshold.

25. (Currently Amended) A scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R , flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

wherein the scheduler is adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R ;

increment a first counter if the comparison of the distance D to the range R determines that $D > R$;

increase SF if the incremented first counter exceeds a first threshold;

increment a second counter if the comparison of the distance D to the range R determines that $D < R/2$; and

decrease SF if the incremented second counter exceeds a second threshold.

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26. (Currently Amended) A scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

wherein the scheduler is adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R; and

increase SF if the distance D exceeds the range R.

27. (Currently Amended) A scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

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wherein the scheduler is adapted to:
calculate the distance D with respect to a particular
flow to be enqueued;
compare the distance D to the range R;
increase SF if the distance D exceeds the range R;

increment a counter if the comparison of the distance
D to the range R determines that $D < R/2$; and
decrease SF if the incremented counter exceeds a
threshold.

28. (Currently Amended) A computer program product for
use with a scheduler for a network processor, the scheduler
including:

a scheduling queue in which a weighted fair queuing
is applied, the scheduling queue having a range R, flows being
attached to the scheduling queue at a distance D from a current
pointer for the scheduling queue, the distance D being
calculated for each flow according to the formula $D = ((WF \times$
 $FS)/SF)$, where:

WF is a weighting factor applicable to a respective
flow;

FS is a frame size attributable to the respective
flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer
readable medium having computer program code adapted to:

calculate the distance D with respect to a particular
flow to be enqueued;

compare the distance D to the range R;

increment a counter if the comparison of the distance
D to the range R determines that $D > R$; and

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increase SF if the incremented counter exceeds a threshold.

29. (Currently Amended) A computer program product for use with a scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS) / SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer readable medium having computer program code adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R;

increment a counter if the comparison of the distance D to the range R determines that $D < R/2$; and

decrease SF if the incremented counter exceeds a threshold.

30. (Currently Amended) A computer program product for use with a scheduler for a network processor, the scheduler including:

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a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS) / SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer readable medium having computer program code adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R;

increment a first counter if the comparison of the distance D to the range R determines that $D > R$;

increase SF if the incremented first counter exceeds a first threshold;

increment a second counter if the comparison of the distance D to the range R determines that $D < R/2$; and

decrease SF if the incremented second counter exceeds a second threshold.

31. (Currently Amended) A computer program product for use with a scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being

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calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer readable medium having computer program code adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R; and

increase SF if the distance D exceeds the range R.

32. (Currently Amended) A computer program product for use with a scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS)/SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer readable medium having computer program code adapted to:

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calculate the distance D with respect to a particular flow to be enqueued;
compare the distance D to the range R;
increase SF if the distance D exceeds the range R;
increment a counter if the comparison of the distance D to the range R determines that $D < R/2$; and
decrease SF if the incremented counter exceeds a threshold.

33. (Currently Amended) A computer program product for use with a scheduler for a network processor, the scheduler including:

a scheduling queue in which a weighted fair queuing is applied, the scheduling queue having a range R, flows being attached to the scheduling queue at a distance D from a current pointer for the scheduling queue, the distance D being calculated for each flow according to the formula $D = ((WF \times FS) / SF)$, where:

WF is a weighting factor applicable to a respective flow;

FS is a frame size attributable to the respective flow; and

SF is a scaling factor;

the computer program product comprising:

a medium readable by a computer, the computer readable medium having computer program code adapted to:

calculate the distance D with respect to a particular flow to be enqueued;

compare the distance D to the range R; and

adjust the scaling factor SF based on a result of the comparison of the distance D to the range R.